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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/624,456  
Filing Date: July 22, 2003  
Appellant(s): KERTH ET AL.

\_\_\_\_\_  
MAXIMILIAN R. PETERSON  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 5/22/08 appealing from the Office action  
mailed 10/23/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

3,100,282	FLETCHER	10-1958
6,198,347	SANDER ET AL	3-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Fletcher (US 3,100,282).

Regarding claim 1, Fletcher teaches a converter (See the whole Fig. 1-2) in a radio-frequency (RF) apparatus, the converter (See the whole Fig. 1-2) comprising a feedback circuitry (30, 16, 10, 15, See Fig. 1-2, col. 2, ll. 20-25; Col. 3, ll.3-11) having a shielded input 32 and a shielded output 34 (Fig. 2), wherein the shielded input 32 and the shielded output 34 (Col. 4, ll. 42-47) inherently tend to reduce interference in the converter (See MPEP §2114, apparatus must be distinguished from the prior in terms of structure rather than function).

Regarding claim 2, Fletcher teaches a first filter 11 coupled to the shielded input 32 of

the feedback circuitry (30, Fig. 1-2); and a second filter 34 coupled to the shielded output of the feedback circuitry (30, Fig. 1-2).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 3-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. in view of Sander et al. (US 6,198,347)

Regarding claim 3, Fletcher teaches a method of reducing interference in a circuit in a radio-frequency (RF) apparatus, wherein the circuit (See the whole Fig. 1-2) has an input 32 and an output 34, the method comprising: shielding 32 an input of the circuit

(Fig. 2, Col. 4, ll. 42-47); and shielding 34 an output of the circuit (Fig. 2, Col. 4, ll. 42-47). Fletcher does not explicitly teach that the amplifier in the circuit is classified as class A or B (linear) or class C (non-linear). Sander et al teach that, depend on design choice, amplifiers can be either linear class A or B amplifier or non-linear class C amplifiers (col. 1, lines 27-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include non-linear circuit in the apparatus of Fletcher in order to reduce power consumption with a trading-off of linearity (Col. 1, ll. 52-53).

Regarding claim 4, Fletcher also teaches comprising filtering 11 an input signal supplied to the input of the non-linear circuit 11, 12, 14 (fig. 2).

Regarding claim 5, Fletcher teaches a radio-frequency (RF) apparatus, comprising:

- a signal-processing circuit (See the whole Fig. 1-2);

- a first shield 32 that shields an input of the signal-processing circuit (Fig. 2, Col. 4, ll. 42-47); and

- a second shield 34 that shields an output of the signal-processing circuit (Fig. 2, Col. 4, ll. 42-47)). Fletcher does not explicitly teach that the amplifier in the circuit is classified as class A or B (linear) or class C (non-linear). Sander et al teach that, depend on design choice, amplifiers can be either linear class A or B amplifier or non-linear class C amplifiers (Col. 1, ll. 27-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include non-linear circuit in the

apparatus of Fletcher in order to reduce power consumption with a trading-off of linearity (Col. 1, ll. 52-53).

Regarding claims 6-11, Fletcher fail to teach that the non-linear signal-processing circuit comprises switched-capacitor circuitry, or noise-shaping converter circuitry, or analog-to-digital converter circuitry, or digital-to-analog converter circuitry, or multiplier circuitry, or modulator circuitry. However, Fletcher suggests that his invention also applies to other circuit units (Col. 4, ll. 71-74). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the shielding of Fletch to other circuits, thereby reducing influence of the electrostatic and electromagnetic fields occur at the circuit.

Regarding claim 12, Fletcher also teaches

a first filter 11 that filters an input signal 32 of the non-linear signal-processing circuit (30, 16, 10, 15, Fig. 2); and

a second filter 14 that filters an output signal of the non-linear signal-processing circuit (30, 16, 10, 12, Fig. 2).

Regarding claim 13, Fletcher also teaches that the first shield comprises a conduit 32, and that the second shield comprises a conduit 34 (Fig. 2).

Regarding claim 14, Fletcher further teaches that the first shield comprises a ground plane 35 (Fig. 2),

and the second shield comprises a ground plane 35 (Fig. 2), see Col. 4, ll. 50-53.

Regarding claims 15-17 and 20, the claims are interpreted and rejected for the same reason as set forth in claims 6-11.

Regarding claim 18, Fletcher also teaches shielding the input of the non-linear circuit comprises using a conduit 32, and wherein shielding the output of the non-linear circuit comprises using a conduit 34 (Fig. 2).

Regarding claim 19, Fletcher further teaches that shielding the input of the non-linear circuit comprises using a ground plane 35 (Fig. 2), and wherein shielding the output of the non-linear circuit comprises using a ground plane 35 (Fig. 2), see Col. 4, ll. 50-53.

#### **(10) Response to Argument**

Before responding to Applicant's argument, the invention can be briefly summarized as followed:

In a Radio Frequency (RF) apparatus (Fig. 1 of the present invention) a general converter 109A (Fig. 7 of the present invention) including feedback circuitry 134 (Fig. 7) in the signal switching circuit 109 (Fig. 1) can have interferences with signals generated



by other circuitries in the RF apparatus (Fig. 1). The invention's concept is to reduce those interferences by simply shielding the input and output of the general converter 109A (fig. 7) with shields 163E and 163A, respectively.

Applicant's argument can be categorized as followed:

1) Rejection of claim 1 under 102(b):

a) At the outset, Fletcher's transducer 10 cannot teach the claimed "converter." As the Applicant has noted, the claimed "converter" includes a "feedback circuitry." Fletcher's transducer 10, according to Fletcher's own description, does not appear to include a feedback circuit.

Put another way, the Office cannot have it both ways. If the Office contends that Fletcher's transducer 10 actually constitutes the claimed "converter in a radio-frequency (RF) apparatus,," the Office must show how Fletcher's transducer 10 includes "a feedback circuitry having a shielded input and a shielded output, wherein the shielded input and the shielded output tend to reduce interference in the converter." In other words, the Office must show that Fletcher's transducer 10 includes "a feedback circuitry having a shielded input and a shielded output, wherein the shielded input and the shielded output tend to reduce interference in the converter".

b) Claim 1 recites a "converter in a radio-frequency (RF) apparatus." Fletcher, according to the Applicant's reading, nowhere discusses using transducer 10 as part of a radio-frequency (RF) apparatus. Thus, the Applicant respectfully submits that the Office incorrectly asserts that "the transducer of Fletcher reads on the claimed converter."

c) The Office Action asserted that "the functional language of 'tend to reduce interference' can be performed by shielded structure of Fletcher (see M.P.E.P §2114)." Office Action at 7. Once again, the Office Action failed to set forth a proper legal basis for the assertion, so that the Applicant may properly respond. Section 2114 of the MANUAL OF PATENT EXAMINING PROCEDURE (MPEP) does not state some broad prohibition against functional claim language. Infact, the MPEP states -- correctly -- that "apparatus may be recited either structurally or functionally." MPEP § 2114. Furthermore, as articulated above, Fletcher fails to disclose the claimed apparatus. Thus, the Office Action's assertion that "the functional language of 'tend to reduce interference' can be performed by shielded structure of Fletcher" lacks a proper legal basis.

d)The Office Action further alleges that "the 'wherein' clause is not given weight in this particular case (see M.P.E.P § 2111.04)." Office Action at 7. Section 2111.04 of the MPEP states: "[E]xamples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are: ... (B) 'wherein' clauses ....

The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case." MPEP § 2111.04 (emphasis added).

Here, the Office Action failed to provide any analysis of the applicability of section 2111.04. Rather, it made the bald assertion that "the 'wherein' clause is not given weight in this particular case." Without any analysis, the Office Action failed to provide any proper legal grounds to which the Applicant may formulate a response. Put another way, the Office Action did not analyze the "facts of the case" to reach the conclusion that it reached with respect to the "wherein" clause. Thus, once again, the Office Action failed to provide a prima facie rejection of the claim.

#### II) Rejections of claims 3 and 5 under 103:

a) Office Action at 3-4. At the outset, the Applicant notes that, as articulated above in connection with claim 1, Fletcher does not teach "a method of reducing interference in a circuit in a radio-frequency (RF) apparatus," as the Office Action alleged. The Applicant cannot find any teaching or suggestion in Fletcher regarding the use of the disclosed circuit in a radio-frequency (RF) apparatus.

b)Furthermore, the Office Action fails to support the assertion that "Fletcher does not explicitly teach that the operational amplifier in the circuit is classified as class A (linear) or class B or C (non-linear)." Office Action at 3-4. The Applicant requested that, if the Office wishes to rely on the obviousness rejection based on Fletcher as outlined in the Office Action, the Office establish (with a proper evidentiary basis, such as citing specific passages of Fletcher, or an Examiner's declaration) that Fletcher teaches that amplifier 12 is an operational amplifier. The Office has failed to do so. Rather, the Office Action merely repeated the statements made previously. To the Applicant's reading, Fletcher merely teaches that "amplifier 12 may be conventional in design." Fletcher at col. 3, at line 3.

#### Examiner's response:

Regarding Section I, point a), as stated in the 102 rejection, the claimed converter reads on the whole circuit of Fig. 1 or Fig. 2. The converter (Fig. 1-2) includes

feedback circuitry (30, 16, 10, 15, See Fig. 1-2, col. 2, ll. 20-25; Col. 3, ll.3-11) having a shielded input 32 and a shielded output 34 (Fig. 2, Col.4, ll. 42-47). Applicant singled out transducer 10 as the claimed converter, while the office action interpreted the converter as the whole circuit of Fig. 1 or Fig. 2. Furthermore, the claimed "comprising" and "having" are open-ended limitations. The argument that "the claimed converter includes feedback circuitry, or the feedback circuitry" is not in the claim. Therefore, given the broadest reasonable claimed interpretation, the converter reads on the whole circuit of Fig. 1 or Fig. 2 that include the feedback circuitry 30, 16, 10 and 15.

Regarding Section I, point b), in response to applicant's arguments, the recitation "a radio-frequency (RF) apparatus" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding Section I, point c), According to MPEP §2114, >While features of an apparatus may be recited either structurally or functionally, claims<directed to>an< apparatus must be distinguished from the prior art in terms of structure rather than function.>In *re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the

limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). Therefore, the functional language of "tend to reduce interference" is anticipated by the shielding structure of Fletcher as the "tendency" to reduce interference is inherent to the shielding structure of Fletcher.

Regarding Section I, point d), according to MPEP §2111.04, Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:

- (A) " adapted to " or "adapted for " clauses;
- (B) " wherein " clauses; and
- (C) " whereby " clauses.

The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case. In *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005), the court held that when a "whereby" clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention." *Id.* However, the court noted (quoting *Minton v. Nat'l Ass'n of Securities Dealers, Inc.*, 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620

(Fed. Cir. 2003)) that a "whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited.". In this case, the term "tend to reduce interference in the converter" simply recites an intended result and fails to limit to a particular structure.

Regarding Section II, point a), this argument has been addressed in section I, point b, regarding the limitation in the preamble.

Regarding Section II, point b), one having skilled in the art can recognize that an amplifier can be categorized as either linear or non-linear amplifier. Therefore, the amplifier 12 in Fig. 1-2 of Fletcher can be classified as either linear amplifier (class A or B) or non-linear amplifier (single ended class B or class C) as explained by Sander et al in Col. 1, ll. 27-67. Consequently, the Office Action does not fail to support the amplifier, it is Applicant's position that attacks the references individually.

Finally, Applicant asserts that the claims do not stand or fall together, but there is no specific argument concerning the rejection of dependent claims. Therefore, the above response also applies to the dependent claims.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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